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| | | | EXAMINER |
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| 48150 | 7590 | 02/17/2006 | NGUYEN, CHAU T |

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| ART UNIT | PAPER NUMBER |
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| 2176 | |

DATE MAILED: 02/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on <u>29 November 2005</u>.

2a)☒ This action is **FINAL**.    2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,2 and 4-24* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

## DETAILED ACTION

1.      Amendment filed on 11/29/2005 has been entered.  Claims 1-2 and 4-24

are presented for examination.

### *Claim Rejections - 35 USC § 103*

2.      The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described
> as set forth in section 102 of this title, if the differences between the subject matter sought to
> be patented and the prior art are such that the subject matter as a whole would have been
> obvious at the time the invention was made to a person having ordinary skill in the art to which
> said subject matter pertains.  Patentability shall not be negatived by the manner in which the
> invention was made.

3.      Claims 1-2 and 4-24 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Domini et al. (Domini), US Patent No. 6,085,206, and further

in view of Schabes et al. (Schabes), US Patent No. 6,424,983.

4.      As to claims 1, 11, 20 and 23-24, Domini discloses a method for intelligent

spellchecking, comprising:

performing a spellchecking of a word by considering an entire sentence

and a structure of the entire sentence (Abstract, and col. 3, line 31 – col. 4, line

30: verifying the accuracy of the grammatical composition of a sentence and the

spelling of words within the sentence in an electronic document, and determining

whether any of the words in the sentence are misspelled).

parsing the sentence to produce a first parse (col. 3, line 55 – col. 4, line

30: a sentence is parsed from a document)

examining a list of words in the sentence and identifying a confusable

original word along with its potential replacement (col. 3, line 55 – col. 4, line 30

and col. 11, line 9 – col. 12, line 7: determining whether any of the words in the

sentence are misspelled and a list of words for suggestion (its potential

replacement) to replace the misspelled words);

wherein said performing a spellchecking comprises determining a context

of said word by slot-filling (col. 3, line 55 – col. 4, line 30 and col. 11, line 9 – col.

12, line 7: determining whether any of the words in the sentence are misspelled

and a list of words for suggestion (its potential replacement or slot-filling) to

replace the misspelled words; col. 12, line 50 – col. 13, line 18: the misspelled

word will be replaced with one of the suggestions).

However, Domini does not explicitly disclose comparing slot-filling

information of the first parse to slot-filling statistics for the original word. Schabes

discloses text is input to spell checking module, the spell checking module then

identifies or detects all misspelled word in response to the user input text,

spelling suggestion module determines and outputs a list of correctly-spelled

alternative or replacement words for every misspelled word in the text by

automation conversion (col. 10, lines 35-65). In addition, Schabes discloses

contextual ranking module generates a finite state machine (FSM) for the input text based on a predetermined grammatical rules to provide a contextually-ranked list (slot-filling statistics) of the alternatives for each misspelled word in the input text, and then best suggestion selection module selects the best alternative for each misspelled word, replaces each misspelled word in the text with its corresponding best alternative (col. 11, lines 1-21). Since Schabes discloses a system for correcting misspelled words and grammar in input text, which is similar to the system for verifying accuracy of spelling and grammatical composition of a document of Domini, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Schabes and Domini to include comparing slot-filling information of the first parse to slot-filling statistics for the original word. Schabes suggests that using a spelling and grammar checking system is to correct words that have misused in a given context in cases where the words have been spelled incorrectly and in cases where the words have been spelled correctly.

5. As to claims 2 and 12, Domini disclose parsing the sentence to produce a first parse (col. 3, line 55 – col. 4, line 30: a sentence is parsed from a document);

replacing the confusable word with its replacement to produce a resulting sentence (col. 12, line 50 – col. 13, line 18: the misspelled word will be replaced with one of the suggestions); and

However, Domini does not disclose parsing the resulting sentence to produce a second parse before said comparing slot-information of the first parse. Schabes discloses detecting misspelled words in a text, for each misspelled word, determining a list of alternative words for the misspelled word, replacing the misspelled word in the text with the selected one of the alternative words (first parse), and then checking the document for grammatically-incorrect words by generating a finite state machine (parsing, second parse) for text in the text document (Abstract, col. 2, line 45 – col. 5, line 57 and col. 22, lines 32-62). Since Schabes teaches a system for spelling and grammar checking, which is similar to the system for verifying accuracy of spelling and grammatical composition of a document of Domini, thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Schabes and Domini to include parsing the resulting sentence to produce a second parse. Schabes suggests that using a spelling and grammar checking system is to correct words that have misused in a given context in cases where the words have been spelled incorrectly and in cases where the words have been spelled correctly.

6.     As to claims 4, 5 and 13, Domini-Schabes discloses comparing slot-filling information of the second parse to the slot-filling statistics for the replacement word (Schabes discloses text is input to spell checking module, the spell checking module then identifies or detects all misspelled word in response to the

user input text, spelling suggestion module determines and outputs a list of correctly-spelled alternative or replacement words for every misspelled word in the text by automation conversion (col. 10, lines 35-65). In addition, Schabes discloses contextual ranking module generates a finite state machine (FSM) for the input text based on a predetermined grammatical rules to provide a contextually-ranked list (slot-filling statistics) of the alternatives for each misspelled word in the input text, and then best suggestion selection module selects the best alternative for each misspelled word, replaces each misspelled word in the text with its corresponding best alternative (col. 11, lines 1-21). Since Schabes discloses a system for correcting misspelled words and grammar in input text, which is similar to the system for verifying accuracy of spelling and grammatical composition of a document of Domini, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Schabes and Domini to include comparing slot-filling information of the first parse to slot-filling statistics for the original word. Schabes suggests that using a spelling and grammar checking system is to correct words that have misused in a given context in cases where the words have been spelled incorrectly and in cases where the words have been spelled correctly).

7.      As to claims 6 and 14, Domini-Schabes disclose wherein a better match indicates the preferred spelling in context (Schabes, col. 10, line 35 – col. 11, line 21 and col. 17, line 8 – col. 22, line 26: Schabes discloses contextual ranking

module generates a finite state machine (FSM) for the input text based on a predetermined grammatical rules to provide a contextually-ranked list (slot-filling statistics) of the alternatives for each misspelled word in the input text, and then best suggestion selection module selects the best alternative for each misspelled word, replaces each misspelled word in the text with its corresponding best alternative (col. 11, lines 1-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Schabes and Domini to include a better match indicates the preferred spelling in context. Schabes suggests that using a spelling and grammar checking system is to correct words that have misused in a given context in cases where the words have been spelled incorrectly and in cases where the words have been spelled correctly).

8.    As to claims 7 and 15, Domini-Schabes disclose wherein said first and second parses produce a parse score and in determining a parse score each parse automatically considers a slot-filling statistics of the original word and the replacement word (Schabes, col. 8, line 43 – col. 9, line 25: list of alternative words was output by spelling suggestion module is then passed to automation conversion module along with original text to produce a rank (parse score) associated with each alternative word comprises a correctly-spelled version of the original misspelled word. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of

Schabes and Domini to include parses produce a parse score and in determining

a parse score each parse automatically considers a slot-filling statistics of the

original word and the replacement word. Schabes suggests that using a spelling

and grammar checking system is to correct words that have misused in a given

context in cases where the words have been spelled incorrectly and in cases

where the words have been spelled correctly).

9.      As to claims 8 and 16, Domini-Schabes disclose wherein a comparison of

the matches includes checking both a mother designation and a daughter

designation of words in said sentence (Schabes, col. 20, lines 40-49: grammar

application module analyzed subject (daughter) and verb (mother). It would have

been obvious to one of ordinary skill in the art at the time the invention was made

to combine the teachings of Schabes and Domini to include checking both a

mother designation and a daughter designation of words in a sentence so it

would correct grammar based on subject verb agreement rule).

10.     As to claims 9, 17 and 21-22, Domini-Schabes disclose wherein a

decision as to which word is best depends on comparing a first parse score and

a second parse score, independently of any use of lexical statistics (: Schabes,

col. 8, line 43 – col. 9, line 25 and col. 17, line 8 – col. 22, line 26: list of

alternative words was output by spelling suggestion module is then passed to

automation conversion module along with original text to produce a rank (parse

score) associated with each alternative word comprises a correctly-spelled version of the original misspelled word. Schabes also discloses in col. 20, lines 40-49: grammar application module analyzed subject (daughter) and verb (mother). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Schabes and Domini to include wherein a decision as to which word is best depends on comparing a first parse score and a second parse score, independently of any use of lexical statistics. Schabes suggests that using a spelling and grammar checking system is to correct words that have misused in a given context in cases where the words have been spelled incorrectly and in cases where the words have been spelled correctly).

11.     As to claims 10 and 18-19, Domini-Schabes disclose wherein a selection of a best match for a word determined to be misspelled is performed by comparing a first parse score and a second parse score. (Schabes, col. 10, line 35 – col. 11, line 21 and col. 17, line 8 – col. 22, line 26: Schabes discloses contextual ranking module generates a finite state machine (FSM) for the input text based on a predetermined grammatical rules to provide a contextually-ranked list (slot-filling statistics) of the alternatives for each misspelled word in the input text, and then best suggestion selection module selects the best alternative for each misspelled word, replaces each misspelled word in the text with its corresponding best alternative (col. 11, lines 1-21). It would have been

obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Schabes and Domini to include a better match indicates the preferred spelling in context. Schabes suggests that using a spelling and grammar checking system is to correct words that have misused in a given context in cases where the words have been spelled incorrectly and in cases where the words have been spelled correctly).

### *Response to Arguments*

12.     In the remarks, Applicant(s) argued in substance that

A. Neither Domini nor Schabes, nor any combination thereof, teaches or suggests "comparing slot-filling information of the first parse to slot-filling statistics for the original word" as recited in claim 1, and similarly recited in claim 11, 20, 23 and 24.

In reply to argument A, Applicant described in the remarks "In contrast, the claimed invention uses a parse to determine the slot-filling relations which means that the claimed invention can handle long-distance relations, and apply statistical information in these cases. For example, if a sentence recited "Which flour did you say was growing in the garden?", the claimed invention would determine that the writer actually intended to say "flower" as opposed to "flour". Here, the parse supplies a user with the long-distance information that "flour" is the subject of grow, and the statistical database of

slot-filling data indicates a strong preference for "flower" being the subject of grow rather than "flour"". (see pages 9-10 of the remarks). Thus, Applicant's system compares slot-filling information of the first parse to slot-filling statistics for the original word and based on the context of the parsed sentence to determine a match for the slot-filling information from the slot-filling statistics. In this case, Schabes discloses a system for detecting a misspelled word in the input text, determines a list of alternative words for the misspelled word, and ranks the list of alternative works based on a context of the input text, the system then selects one of the alternative word in the text with the selected one of the alternative words (Abstract). In addition, Schabes discloses contextual ranking module generates a finite state machine (FSM) for the input text based on a predetermined grammatical rules to provide a contextually-ranked list (slot-filling statistics) of the alternatives for each misspelled word in the input text, and then best suggestion selection module selects the best alternative for each misspelled word, replaces each misspelled word (slot-filling information) in the text with its corresponding best alternative (col. 11, lines 1-21). Even though Schabes reference does not explicitly spell out the word "comparing", however, one of ordinary skill in the art would have assumed that in order to select one of the alternative words from the contextually ranked list for the misspelled word (slot-filling information), there must be a step of comparing the misspelled word (slot-filling information) with the contextually ranked list (slot filling statistics) so the system would pick a correct one for the misspelled word based on the context of the sentence.

B. Nowhere has the Examiner responded to Applicants traversal arguments based on claim 3 which is now added to claim 1.

In reply to argument B, claim 1 before (without claim 3 "comparing slot-filling information of the first parse to slot-filling statistics for the original word") was rejected under USC 102(e) using Domini reference (Office Action dated March 24, 2005). Applicants' Amendment filed on May 24, 2005 added claim 3 to claim 1. Thus, it would change the scope of claim 1 by adding claim 3 to claim 1, and therefore, Examiner rejected claim 1 under USC 103 (a) using Domini in view of Schabes. Since adding claim 3 to claim 1 changed the scope of claim 1 and new rejection USC 103(a) was applied to claim 1, therefore Examiner did not response to the argument based on the added limitation of claim 3.

**THIS ACTION IS MADE FINAL.**   Applicant is reminded of the extension of time

policy as set forth in 37CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action.   In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action.   In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Chau Nguyen whose telephone number is (571) 272-

4092.  The examiner can normally be reached on 8:30 am – 5:30 pm Mon-Fri.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Heather Herndon, can be reached on (571) 272-4136.   The fax phone

number for the organization where this application or proceeding is assigned is 703-

872-9306.   On July 15, 2005, the Central Facsimile (FAX) Number will change from

703-872-9306 to 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chau Nguyen
Patent Examiner
Art Unit 2176

WILLIAM BASHORE
PRIMARY EXAMINER
2/15/2006